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No. 126

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USSR REPORT
BIOMEDICAL AND BEHAVIORAL SCIENCES

No. 126

This serial publication contains articles, abstracts of articles and news items from USSR scientific and technical journals on the specific subjects reflected in the table of contents.

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USSR

NEW METHOD ASSESSES CONDITION OF PILOT'S VESTIBULAR ANALYZER

Moscow IZVESTIYA AKADEMII NAUK SSSR, Seriya Biologicheskaya in Russian No 4,
Jul/Aug 79 pp 498-504 manuscript received 19 Dec 77

SIDEL'NIKOV, I. A.

[Abstract] A comparative evaluation has been made, on 60 subjects, of changes in the manifestation of a nystagmic reaction in order to identify sensitivity or stability of the otolithic and cupular apparatuses in pilots to an otolithic stimulus. Each subject--prior to the basic examinations which recorded caloric nystagmus under usual conditions and under the otolithic stimulus of a 2-unit load--was measured for the following indices: i) threshold of sensitivity to linear acceleration; ii) stability to the cumulative action of linear acceleration in the Zhilov swing; iii) threshold of sensitivity of the vestibular apparatus to a galvanic current; iv) threshold of sensitivity to angular acceleration with respect to nystagmus at the time of stop-stimuli; v) stability to NKUK, i.e., to continuous cumulation of Coriolis acceleration (Markaryan, et al, 1966); and vi) duration of nystagmus, Barani test. The 60 subjects were subjected to a total of 454 tests. The otolithic stimulus either activated nystagmus or did not affect it. Subjects in whom the speed of the slow phase of nystagmus exceeded the normal values (when they were exposed to the 2-unit load) were designated vestibular-stable; and those who showed no essential change were designated vestibular-unstable. The data indicate that vestibular nystagmus is an integral reaction which can be used to determine the functional status of both the cupular and the otolithic apparatuses of the vestibular analyzer. The test with recording of caloric nystagmus under an increased weightload can be used as an additional method of vestibulometry in complex cases of medical examination of cadets, pilots and other special groups, under hospital conditions. Figure 1; references 18: 10 Russian, 8 Western.
[552-8586]

EFFECTS OF GROWTH CONDITIONS ON PROTEUS VULGARIS ULTRASTRUCTURE

Kiev DOPOVIDI AKADEMIYI NAUK UKRAYINS'KOYI RSR in Ukrainian No 7, 1979
pp 579-581 manuscript received 11 Dec 78

KORDYUM, YE. L., MASHINSKIY, L. A., NEFEDOV, YU., BOCHAGOVA, O. P. and
SYTNIK, K. M., academician, Ukrainian SSR Academy of Sciences, Institute
of Botany, Ukrainian SSR Academy of Sciences

[Abstract] Ultrastructural studies were conducted on *Proteus vulgaris* which had been grown aboard Salyut-6 during a space flight as part of a joint Soviet-French experiment "Tsitos." Examination of cells from 36, 48, and 72 h cultures in the stationary phase grown on semisolid tryptose medium in polyethylene packets at 25°C showed that under these conditions, in combination with 'facultative anaerobiasis,' the cell membranes formed cowl-like outgrowths with extended filamentous structures at the ends. In addition, complicated membranous structures appeared within cells which were derived from the plasmalemma and were similar to the mesosomes of G+ bacteria. Figures 9; references 5: 1 Western, 4 Russian.
[70-12172]

USSR

UDC 632.954

ANALYTIC METHODS FOR DIPYRIDYL HERBICIDES

Moscow AGROKHIMIYA in Russian No 7, 1979 pp 162-168

ZHEMCHUZHIN, S. G.

[Abstract] A brief review is presented of the physical and chemical methods used in analysis for the presence of dipyridyl herbicides. Mention is also made of semiquantitative biological methods of analysis which rely on the high susceptibility of certain algae (e.g., *Spirodela polyrrhiza*) or duck-wheat (*Lemna minor*) to these agents. References 70: 1 Polish, 12 Russian, 57 Western.
[626-12172]

USSR

UDC 631.811

EFFECT OF CARBOAMMOPHOS ON CROP YIELDS

Moscow AGROKHIMIYA in Russian No 7, 1979 pp 36-44 manuscript received 12 Jul 78

PODKOLZINA, G. V., and SARBAYEV, A. N., Scientific Institute of Fertilizers, Insecticides, and Fungicides, Moscow

[Abstract] Extensive experiments conducted from 1971 to 1977 under various climatic and soil conditions demonstrated that carboammophos is as effective in terms of crop harvests as mixtures of fertilizers involving urea and ammonium nitrate. Carboammophos was more effective than commonly used fertilizers in the case of winter wheat cultivation on carbonate soils, but less impressive than fertilizer mixtures involving ammonium nitrate in case of surface application for cereal crops. References 8 (Russian).
[626-12172]

USSR

UDC 576.851.315.097.22:615.332(Laevomycetinum)

SOME PATHS OF ENZYMATIC INACTIVATION OF LEVOMYCETIN IN EL TOR VIBRIOS WITH PLASMID AND CHROMOSOMAL RESISTANCE TO THE ANTIBIOTIC

Moscow ANTIBIOTIKI in Russian Vol 24 No 7, Jul 79 pp 502-507 manuscript received 25 Jan 79

KOROBENNIK, N. V., MISHAN'KIN, B. N. and SOKOLOVA, M. T., Scientific Research Plague Control Institute, Rostov-on-Don

[Abstract] In the absence of available literature on levomycetin inactivation by the cholera agent, this work has examined two inactivation paths, viz., o-acetylation of the hydroxyl groups and reduction of the aromatic nitro-group of the levomycetin molecule. Two subcultures of *Vibrio* El Tor were used; strain E coli K12R1 (resistant to streptomycin, monomycin, benzylpenicillin, kanamycin and levomycetin) was used as donor of the R-factor. One of the vibrio subcultures was resistant to polymyxin, the other possessed chromosomal resistance to rifampicin; these cultures were sensitive in vitro to the other antibiotics cited. Crossing of the vibrios produced variants with specific resistances. The vibrios with extra-chromosomal resistance showed a high rate of acetylation of levomycetin, under aeration conditions, and of reduction of the nitrogroups, in the absence of oxygen. Vibrios, with plasmid resistance to the antibiotic, acetylated levomycetin with participation of highly-active levomycetin-acetyltransferase; vibrios sensitive to the antibiotic, and a strain with chromosomal resistance, exhibited a very low rate of acetylation of the levomycetin. The El Tor vibrios were found to contain levomycetin-oxydoreductase which, under anerobic conditions, catalyzed the reduction of the nitrogroup; this activity was considerably inhibited under aeration. Antibiotic-sensitive and antibiotic-resistant vibrios were both able to follow the nitrogroup reduction path to inactivate the levomycetin. Figure 1; references 16: 3 Russian, 13 Western (one by Korobeynik, et al). [633-8586]

SURVEY ARTICLE ON IMMOBILIZED ENZYMES

Kiev VISNYK AKADEMIIYI NAUK UKRAYINS'KOYI RSR in Ukrainian No 5, 1979 pp 52-60

GVOZDYAK, P. I., doctor of biological sciences, ROTMISTROV, M. M., doctor of biological sciences and MOGILEVICH, N. F., candidate of biological sciences

[Abstract] A literature review is presented of the current state of immobilized enzyme technology and its application in biochemical engineering. Several methods are currently employed for the immobilization of enzymes which offer various advantages and include the following: covalent binding to a carrier, imbedding within the lattice of a gel, microencapsulation, physical adsorption to supporting material, and electric field immobilization. In general, such enzyme preparations retain full or nearly full activity, can be reused, and are stable to denaturation (or further denaturation). References 46: 1 Ukrainian, 10 Western, 35 Russian. [536-12172]

EFFECT OF PROTEASE INHIBITORS ON IN VIVO DEGRANULATION OF MAST CELLS

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 258-261 manuscript received 18 Apr 78

SHPAK, S. I., PROTSENKO, V. A., KHARCHENKO, V. Z., SPITSYN, I. F., BOGADEL'-NIKOV, I. V., VESELOV, V. F. and OPRYSHKO, V. V., Medical Institute, Simferopol'

[Abstract] Peritoneal mast cell degranulation was investigated as a function of postischemic toxemia in 190-210 g male Wistar rats, as well as the effects, on this phenomenon, of intraperitoneal treatment with various protease inhibitors (antitrypsin or antikallikrein sera, Trasylol, or inhibril [sic]). Postischemic toxemia was found to be accompanied by marked elevation of serum protamine degradation activity, which was significantly attenuated by treatment with the inhibitory agents. Simultaneously, there was significant elevation in the number of degranulated peritoneal mast cells, an increase which was also reversed by the inhibitory agents of which the antikallikrein serum was most effective. Treatment with the inhibitors increased the survival rate. The findings were interpreted to indicate that postischemic degranulation is dependent on activation of the kallikrein-kinin system and, thus, the high efficacy of the antikallikrein serum in the treatment of this experimentally induced condition. Figure 1; references 16: 6 Western, 10 Russian. [608-12172]

SYMPOSIUM ON CHOLINERGIC SYNAPSES DEALS WITH PROBLEMS OF MORPHOLOGY

Leningrad ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII in Russian No 5, 1979
pp 112-114

OTELLIN, V. A.

[Abstract] The International Symposium on Cholinergic Synapses was convened in USSR in May 1978. Participants included specialists from the USSR, Bulgaria, Hungary, GDR, Cuba, Poland, Czechoslovakia, England, Canada, the United States, FRG, Italy, Netherlands, France, Switzerland, Norway and Sweden. There were 6 meetings dealing with: synthesis and accumulation of acetylcholine (39 papers); release of acetylcholine (41 papers); electrophysiological and biochemical aspects of postsynaptic action of acetylcholine (11 papers), development, neurotrophic regulation and cholinesterases (9 papers), involvement of cholinergic mechanisms in pathology (6 papers). The number of papers refers to both verbal and visual reports.
[653-10,657]

ELECTRON MICROSCOPY AND HISTOCHEMICAL METHOD OF DEMONSTRATING ACETYLCHOLINESTERASE IN THE MYONEURAL SYNAPSE

Leningrad ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII in Russian No 5, 1979
pp 106-108 manuscript received 3 Jul 78

KULESHOV, V. L., KUZNETSOV, V. G. and CHERNYAK, T. F., Institute of Toxicology, USSR Ministry of Health, Leningrad

[Abstract] A modification of the Kelle thiocholine method was developed for the study of rat myoneural synapses in a phrenic-diaphragmatic preparation; fixing and histochemical treatment are described. ACE [acetylcholinesterase] localization was identified by the product of the histochemical reaction used to mark it: throughout presynaptic and postsynaptic membranes of nerve endings, muscle fibers, nuclear membrane and intercellular space, with lesser amounts in the synaptic fissure. The proposed method is recommended for the study of submicroscopic localization of ACE in such synapses and changes therein due to various experimental factors. Figure 1; references 6 (Western).
[653-10,657]

ACETYLCHOLINESTERASE IN NEURAL PRIMORDIAL CELLS OF THE CHICK EMBRYO

Leningrad ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII in Russian No 5, 1979
pp 21-27 manuscript received 1 Oct 78

MARKOV, R. M., Chair of Histology and Embryology (headed by Prof M. A. Kalugina), Chelyabinsk Medical Institute

[Abstract] Chick embryos were used to study the time of appearance, localization and activity of ACE [acetylcholinesterase], using the product of ACE reaction as a specific marker, and routes of migration of neuroblast cells. ACE is demonstrable in neural tube cells before appearance of specific morphological features, which means that biochemical determination has begun, and this coincides with the proneuroblast stage. Demonstration of ACE, as well as other enzymes of various mediator systems, could serve as one of the main indications for identifying proneuroblast phases. ACE used to obtain a reaction product may serve as a specific marker to define the route of migration of neural primordial cells at early stages of embryo development. Figures 8; references 46: 16 Russian, 30 Western.
[653-10,657]

USSR

UDC 597.583.1:591.58

ACOUSTIC AND ELECTRIC ACTIVITY OF TILAPIA MOSSAMBICA (CICHLIDAE, PISCES)

Moscow VESTNIK MOSKOVSKOGO UNIVERSITETA in Russian No 2, 1979 pp 35-39
manuscript received 28 Jun 77

KONSTANTINOVA, N. G., NIKOL'SKIY, I. D. and TERNEN, L. S., Chair of Vertebrate Zoology

[Abstract] Fish behavior was studied in a tank of zinc-treated iron lined with polyethylene to rule out extraneous electric interference. The study was conducted on 12 Tilapia Mossambica (6 females and 6 males) 2 to 4 years old, 12-18 cm long, in August-January 1974 and 1975. Electric and acoustic components were picked up in the prespawning courting period, courting period, during aggressive and defense behavior, pursuit of female by male and spontaneous fear situation. Electronic and recording equipment used for this purpose is described. Only acoustical signals were inherent in the prespawning behavior. Although this fish has no specialized electric organs, there are electric signals emitted during aggressive-defense behavior, along with acoustic ones. The authors succeeded in recording the electric and acoustic background that is generated when the fish swim and feed, but it did not present any marked amplitude modulation of the electric component. Figures 3; references 7: 4 Russian, 3 Western.
[539-10,657]

USSR

UDC 539.135:611.1

INTEGRAL EVALUATION OF THE HYDRODYNAMIC PROPERTIES OF ARTIFICIAL AORTIC VALVES

Riga MEKHANIKA KOMPOZITNYKH MATERIALOV in Russian No 3, 1979 pp 524-527
manuscript received 28 Dec 78

AGAFONOV, A. V. and LITVINOV, M. M., Institute of Cardiovascular Surgery imeni A. N. Bakulev, USSR Academy of Medical Sciences and the All-Union Scientific Research Institute of Clinical and Experimental Surgery, Moscow

[Abstract] Navier-Stoke's equations were employed in establishing coefficients useful in delineating the hydrodynamic properties of artificial aortic valves. Numerical data are presented for valves AKCh-1-02, AKCh-1-06, AKCh-1-20, AKCh-1-21, and toroid-like valves intended for clinical uses. References 4: 1 Western, 3 Russian.
[551-12172]

USSR

UDC 63.46:502.7

MICROORGANISMS AS INDICATORS OF SOIL CONTAMINATION

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian Vol 32 No 6, Jun 79 pp 541-545 manuscript received 11 Apr 79

KHACHIKYAN, L. A. and CIRGORYAN, K. V., Institute of Soil Science and Agrochemistry, ArmSSR Ministry of Agriculture

[Abstract] The soils examined here were of different genetic types: cinnamon forest steppe (Tumanyanskiy Rayon, Shnokh sovkhov) and flooded shore deposit (Kafanskiy Rayon, Syunik sovkhov). Soil contamination has occurred with growth of the Armenian chemical industry. Bacterial count was done by a method of the Institute of Microbiology, USSR Academy of Sciences, and enzyme activity by A. Sh. Galstyan's (1974) method. Tabulated are changes in unaffected and contaminated soil samples: microbiological changes (bacteria, fungi, etc.) and biological (content, enzyme activity). Pollution of waters (rivers Shnokh and Vokhchi) lowered the microbiological activity of the soil. The changes are considered quantitative potentially applicable as an index of contamination, e.g., with heavy metals. References 11 (Russian). [636-8586]

USSR

UDC 613.31:628.1(L-22

HYGIENIC ASPECTS OF THE PRESENT STATE AND PROSPECTS OF DEVELOPMENT OF AGRICULTURAL WATER SUPPLY

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 60-62 manuscript received 9 Oct 78

SHTANNIKOV, YE. V., professor, ANTONOVA, A. N. and KOCHKIN, V. P., candidates of medical sciences, Saratov Medical Institute

[Abstract] Provision of an adequate supply of water to agriculture requires development of existing supply and construction of new supply systems. The regulation of river flow by dams has little effect on water quality; water quality in main channels and reservoirs is satisfactory but it must be protected from entry of pollution. Regulation and territorial redistribution of run-off is being used to provide adequate water supply where needed. Group supply systems are being supplemented by local systems in rural areas. Economic exploitation of arid and semi-arid areas with fresh water shortages but availability of salt water requires development of desalination processes. Thousands of desalinization devices using the electrodialysis technique will be produced in the 10th Five-Year Plan. References 7 (Russian). [604-2791]

USSR

UDC 575.591

CORRELATION BETWEEN GENETIC AND ENVIRONMENTAL FACTORS IN ETIOLOGY OF VILYUYSK ENCEPHALOMYELITIS. REPORT 1. INCIDENCE OF VE IN FAMILIES

Moscow GENETIKA in Russian No 8, 1979 pp 1502-1512 manuscript received 25 Jul 78 and after revision 9 Nov 78

GOL'DFARB, L. G., FEDOROVA, N. I., CHUMAKOV, M. P., PETROV, P. A., VLADIMIRTSEV, A. I. and IVANOVA, A. I., Institute of Poliomyelitis and Viral Encephalites, USSR Academy of Medical Sciences, Moscow

[Abstract] Vilyuysk encephalomyelitis (VE) refers to a neurological disease which has been occurring for about 100 years among indigenous Yakuts, first limited to Vilyuyskiy Rayon but now extending to central Yakutskaya ASSR. This is a slow form of infection, the viral agent of which is presently under investigation. Statistical methods were used to confirm the hypothesis that both hereditary and environmental factors are involved in intensive spread of the disease in populations where there are both a sufficient number of susceptible individuals and conditions for transmission of the pathogenic agent. There is a tendency toward aggregation of VE cases in specific families that may be attributable to both factors. The assumption is made that all individuals are equally sensitive to the disease, but the long-term contact required to contract it occurs only in specific families. The incubation period is extremely long, an average of 11.3 years. Figures 7; references 19: 11 Russian, 8 Western.
[537-10,657]

USSR

UDC 616.986.7-036.21-078:576.856.7.01:631.46

DISTRIBUTION OF LEPTOSPIRAS IN THE SOIL OF A NATURAL FOCUS OF INFECTION (RADIOISOTOPIC LABELING OF INFECTED VOLES)

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 6, 1979 pp 74-79 manuscript received 21 Feb 77

LITVIN, V. YU., KARASEVA, YE. V. and KARULIN, B. YE., Institute of Epidemiology and Microbiology imeni Gamaleya, USSR Academy of Medical Sciences, Moscow

[Abstract] Studies were conducted with doubly radiolabeled voles (^{60}Co and ^{32}P to determine the relationships between the geographic distribution of the infected animals, sites of urination, and soil samples) from the latter sites containing leptospira. Studies on a one hectare area demonstrated

that soil sites containing leptospira were limited to sites of urination irrespective of vegetation or geologic considerations. Presence of viable leptospira was determined by survival outside the vole body, reintroduction by infected voles, and infection of uninfected voles frequenting such sites and leading to the establishment of new foci. Figures 3; references 13 (Russian).

[543-12173]

USSR

UDC 578.086:576.8.093:577.472(262.5)

NUMERICAL DENSITY AND BIOMASS OF MICROORGANISMS AT VARIOUS DEPTHS OF THE BLACK SEA

Moscow MIKROBIOLOGIYA in Russian No 3, 1979 pp 552-557 manuscript received 3 Oct 78

MITSKEVICH, I. N., Institute of Microbiology, USSR Academy of Sciences

[Abstract] Water samples obtained in the eastern regions of the Black Sea demonstrated that the numerical density and biomass of microorganisms below depths of 150 m (hydrogen sulfide zone) were much greater than in the 0-150 m layer (oxygen zone). The numerical densities in the hydrogen sulfide and oxygen zones were, respectively, 3.8-34.9 thousand cell/ml and 1.4-12.4 thousand cells/ml, while the respective biomass values were 10.8-55.6 and 0.9-6.9 mg/m³. Unique filamentous microbes (first described by Lebedeva, MIKROBIOLOGIYA, 32:1038, 1963) constitute the major portion of the biomass in the hydrogen sulfide zone and, apparently, are involved in hydrogen transformation. Figures 3; references 11: 10 Russian, 1 Western. [545-12172]

USSR

UDC 615.371:576.858.23/.015

ANTIGENIC ACTIVITY AND REACTOGENICITY OF UV INACTIVATED ANTIRABIES VACCINE FROM SHEEP BRAINS

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 6, 1979 pp 39-41 manuscript received 4 May 78

MOROGOVA, V. M., LATYPOVA, R. G., GIL'DINA, S. S., POSPEYEVA, N. A.,
POGREBNIĀK, YE. M., NIKOLAYEVA, N. V. and SMOKOTINA, YE. N., Ufa Scientific
Research Institute of Vaccines and Sera imeni Mechnikov, and the Ufa Municipal Sanitary Epidemiologic Station

[Abstract] UV light inactivated antirabies vaccine prepared from sheep brains was tested for efficacy in comparison with Fermi vaccine on 80 subjects, 17-63 years of age, at risk because of traumatic contact with suspect animals. The subjects were treated subcutaneously with a 5% UV irradiated brain suspension in doses of 3 or 1.5-2 ml for 12-30 injections, or with a 2.5% suspension in 3 ml doses. Fermi vaccine was administered in 3 ml doses. Side effects in the form of hyperemia with infiltration were noted with equal frequency in subjects receiving the full dose 5% suspension or the Fermi vaccine. Subjects treated with half-dose 5% suspension or the 2.5% suspension had a far lower incidence of side reactions. Tests for neutralizing antibodies conducted on 10-11 g mice showed that in 8 days the subjects treated with the sheep brain vaccine had titers ranging from 1:21 to 1:49, and in 30-45 days from 1:534 to 1:948; in the latter period of time subjects treated with the Fermi vaccine presented with mean titer of 1:323. In addition, generally higher antibody titers were generated by subjects immunized with the 2.5% brain suspension. References 7 (Russian).

[543-12172]

USE OF *P. HAMADRYAS* IN EVALUATING THE EFFICACY OF PERORAL VACCINATION AGAINST PLAGUE

Moscow ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII in Russian No 6, 1979 pp 67-71 manuscript received 7 Apr 78

CHICHERIN, YU. V., YEVSTIGNEYEV, V. I., LEBEDINSKIY, V. A., VOROB'YEV, A. A., ZEMSKOV, YE. M., TIMOFEYEV, V. V. and PARAMONOV, V. YE.

[Abstract] *P. hamadryas* monkeys were employed in studies designed to evaluate the efficacy of peroral vaccination with a rehydrated live plague vaccine (strain EB). Administration of the vaccine to unprotected animals and subsequent bacteriologic and histopathologic examination of sacrificed animals led to the isolation of live bacteria from 63% of the monkeys, with largest bacterial accumulations in the submaxillary and neck lymph nodes, 7 days after infection, and in the tonsils, 1-10 days. Histologic changes in the lymphoreticular tissues were compatible with an active immune response against the plague bacteria. The efficacy of immunization was tested by peroral vaccination with a 10% rehydrated solution and aerosol challenge in 30 days with various doses of live bacteria. The results showed that non-immunized animals succumbed to 150-550 live bacteria, whereas only one out of 10 monkeys immunized perorally succumbed to a challenge with 130×10^3 live plague microorganisms. In addition, one out of 12 animals immunized via the respiratory route succumbed to a challenge with 29×10^3 bacteria. The findings indicate that peroral immunization with a rehydrated live vaccine constitutes an effective route of immunization in this species. Figures 1; references 4: 2 Western, 2 Russian.
[543-12172]

USSR

UDC 613.632:577.152.344

EXPERIMENTAL DATA FOR HYGIENIC REGULATION OF ALKALINE PROTEASE DUST IN THE AIR OF A WORK ZONE

Moscow GIGIYENA TRUDA I PROFESSIONAL-NYYE ZABOLEVANIYA in Russian No 7, Jul 79 pp 40-42 manuscript received 3 Aug 77

ZEL'TSER, P. L. and FRIDMAN, YA. S., Institute of Biotechnics

[Abstract] Industries which produce commercial enzymes face the problem of setting up standards for permissible levels of enzyme dusts in the working environment. The proteolytic enzymes, e.g., alkaline protease, possess a weak toxic action, and the present work has examined the toxicity, the danger and nature of the harmful effect of alkaline protease. Results would help to establish maximum permissible levels of that enzyme. The enzyme tested was "Protosubtilin G3x, G10x, G15x, G20x and G25x"; it is a complex of proteolytic substances produced by alcohol precipitation, salting or ultrafiltration from liquid cultures. *B. subtilis* is the microorganism used for its industrial preparation. The sample was found to be slightly toxic for experimental animals, toxicity being a function of the activity of the preparation. It is an irritant to the skin, mucous membranes of the eye and upper respiratory tract and is allergenic. The maximum permissible level recommended is 0.5 mg/m³. References 8 (Russian). [635-8586]

USSR

UDC 613.485:677.862.11:678

EXPERIENCE IN THE USE OF TISSUE CULTURES FOR TOXICOLOGICAL EVALUATION OF TEXTILE MATERIALS

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 75-77 manuscript received 24 Apr 78

GAPOTCHENKO, P. A. and LEYBENZON, A. S., Zaporozhskaya Oblast Sanitation and Epidemiology Station

[Abstract] The possibility of use of cell cultures as an express method of determining toxicity of aqueous extractions was studied using cultures of trypsinized cells of embryonal kidneys of man and extractions of fabric used in everyday clothing, after extractions stood for 24 hours, 3 or 7 days and textiles treated with impregnations based on formaldehyde resins and parallel tests on animals. The experiments showed this method to be reliable, economical, rapid and reproducible means of determining toxicity of a complex of water soluble harmful substances of a general toxicity being given off in a liquid medium. It can be used in laboratories of plants to ensure the products meet hygienic demands. References 3 (Russian). [604-2791]

BACTERIAL DESTRUCTION OF SYNTHETIC ORGANIC FLOTATION AGENTS

Moscow MIKROBIOLOGIYA in Russian No 3, 1979 pp 534-540 manuscript received
23 Dec 78

ILYALETDINOV, A. N. and MENDESHEV, A., Institute of Microbiology and Virology,
Kazakh SSR Academy of Sciences

[Abstract] Soil, enriched with a synthetic flotation agent T-66, was used for the isolation of bacteria capable of utilizing T-66 as sole carbon source. The investigation resulted in the isolation of *Pseudomonas* mixed flora (*Ps. fluorescens*, *Ps. desmolyticum*, *Ps. rathonis*, *Ps. cyanoides viscosa*, *Ps. aeruginosa*) which were capable of oxidizing the components of T-66; 90% degradation was obtained within 4 months, which was potentiated by aeration. Maximum development of the bacterial flora occurred at a redox potential of 220-240 mV on Czapek's medium. The flora under consideration also degraded oxidized kerosene and 'recycle' stock when the latter were used as sole sources of carbon. Addition of glucose further potentiated 'recycle' stock degradation, but inhibited microbial transformation of kerosene. Figures 7; references 18: 5 Western, 13 Russian.

[545-12172]

USSR

UDC 616-057:669.725/-07:612.017.1

SOME SEROLOGICAL INDICES IN WORKERS AT MODERN ENTERPRISES WHICH PROCESS BERYLLIUM AND ITS OXIDES

Moscow GIGIYENA TRUDA I PROFESSIONAL'NYYE ZABOLEVANIYA in Russian No 7, Jul 79 pp 45-47 manuscript received 28 Sep 77

BREKHOVA, N. N., Institute of Labor Hygiene and Occupational Diseases, USSR Academy of Medical Sciences, Moscow

[Abstract] A substantial number of investigators have reported change in immunoreactivity of healthy beryllium workers exposed to permissible levels of Be concentration on the job. Hence, the present work was done: 169 sera of practically healthy workers at two modern Be enterprises were assayed to see whether some indices could be found to point to onset of the irregularity. Antiberyllium, antihymocyte, antirenal, antibodies to the thyroid gland, antipulmonary and antihepatic antibodies were assayed. Sensitization to beryllium was found to occur in the first year of work; concentration of the allergen in the air of the working place as at the maximum permissible level, and even below it. The sensitization is a function of time on the job and regularity of contact. Women were found to be more sensitive to the action of the allergen as were persons with acute inflammatory diseases. References 10: 9 Russian, 1 Western.
[635-8586]

USSR

UDC 613.63:633(479.24)616.1

COMPARATIVE STUDY OF CARDIOVASCULAR PATHOLOGY IN THE RURAL POPULATION OF AZERBAIJAN SSR IN ZONES OF INTENSIVE AND LIMITED USE OF PESTICIDES

Baku AZERBAYDZHANSKIY MEDITSINSKIY ZHURNAL in Azerbaijani, summary in Russian No 6, Jun 79 pp 55-58

AKHUNDOV, V. YU., TKACH, L. I. and BABAYEV, D. A.

[Abstract] The authors, who are associated with an institute for virology, microbiology and hygiene--director is Academician V. Yu. Akhundov--carried out the title study using data of individuals who applied for medical aid in various regions of the AzerSSR which have similar natural, climatic, social-economic and other conditions of life; there was, however, a difference in intensity of use of pesticides in those individual regions with respect to level of use of pesticides on cotton. Individuals of both sexes were

affected with cardiovascular diseases more often in an area with intensive use of pesticides, whereas those diseases showed lower incidence or even no incidence where pesticide use was limited. Cardiovascular pathologies increased yearly in the regions of intensive use of pesticides and reached 178.8% of the initial level. References 10 (Russian). [632-8586]

USSR

UDC 614.7:547.6

COM. TIVE STUDIES OF POLYCYCLIC AROMATIC HYDROCARBONS IN OBJECTS OF HUMAN
NATU. ENVIRONMENT

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 39-43 manuscript received 6 Jun 78

KHESINA, A. YA., SMIRNOV, G. A., SHAPAD, L. M., KFKTES, M., KHORVAT, A., KISH, M. A. and TOTH, B., Oncological Scientific Center, USSR Academy of Medical Sciences, Moscow, State Institute of Hygiene, Hungarian Peoples' Republic, Budapest

[Abstract] A joint study by Soviet and Hungarian scientists involving the use of chromatographic fractionation and subsequent spectral and quantitative determination of carcinogenic polycyclic aromatic hydrocarbons (especially benzpyrine) in atmospheric and soil pollutants revealed the presence of benzpyrine and other polycyclic aromatic hydrocarbons in both the air and water. Determination of benzpyrine level may provide an index for quantitative evaluation of the degree of environmental pollution. Results of the study showed the fruitfulness of joint research but also showed the need for further prophylactic work in this area. References 8: 7 Russian, 1 Western. [604-2791]

DETERMINATION OF LEVEL OF SOME METALS IN ATMOSPHERIC AIR

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 43-44 manuscript received 19 Jun 78

KAMIL'DZHANOV, A. KH., MUNINOV, V. A., UBAYDULLAYEV, R. V. and KHAYDAROV, R. A., Institute of Nuclear Physics of the Uzbek SSR Academy of Sciences, Uzbek Scientific Research Institute of Sanitation, Hygiene and Occupational Diseases, Tashkent

[Abstract] Air samples (filters) irradiated by a collimated beam of charged particles (protons with specific energy) and accelerated on a cyclotron with subsequent measurement of directed gamma-activity with the help of a semiconductor Ge-Li-detector showed a sensitivity of determination of Cr, Ni, Zn, Cu, Ge and Mo of 0.02, 0.06, 0.2, 0.1, 0.05 and 0.05 mkg respectively in the volumes analyzed by the use of this method. Comparison of these results with results of study of artificial samples confirmed the accuracy of this method. Advantages of the method include: high sensitivity, rapidity and ease of execution, possibility of determining several samples at one time and simultaneous irradiation of several samples, and the absence of decomposition of samples. The method has been tested under industrial conditions to analyze air of plant premises and measurement of emissions into the air.

[604-2791]

DETERMINATION OF TOXIC SUBSTANCES BEING GIVEN OFF BY POLYMER MATERIALS UNDER CONDITIONS OF AN EXPERIMENT

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 45-48 manuscript received 3 Oct 78

DNITRIYEV, M. T., doctor of chemical sciences, and MISHCHIKHIN, V. A., Institute of General and Communal Hygiene imeni A. N. Syain of the USSR Academy of Medical Sciences, Moscow, 4th Main Administration of the USSR Ministry of Health, Moscow

[Abstract] A method was described of determining toxic substance concentration and coefficients of diffusion in polymer materials, predicting concentrations of the substance in the air of housing and public buildings and time required for them to return to permissible levels with consideration

of adsorption of the substances under experimental conditions. It was shown that the degree of adsorption of toxic substances under experimental conditions depends on their physico-chemical properties, characteristics of the chamber used and temperature of the environment. Adsorption of substances caused errors in determination of their concentration in polymer materials of up to 160%, of the coefficient of diffusion of up to 40% and errors of up to 110% during prediction of their content in the air of residences and public buildings. Figure 1; references 6: 3 Russian, 1 Western.
[604-2791]

USSR/BULGARIA

UDC 614.71/.73-07

STUDY OF TENDENCIES TOWARD POLLUTION IN ATMOSPHERIC AIR

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 62-64 manuscript received 12 Jun 78

KALPAZANOV, V., candidate of medical sciences and ARGIROVA, M., and candidate of chemical sciences, Medical Academy, Institute of Hygiene and Occupational Diseases, Sophia, Bulgaria

[Abstract] The method of least squares was used to determine mean annual concentration of nitrogen dioxide in some industrial centers of Bulgaria. Trends computed by the method showed an increase followed by a reduction (in Plovdiv, Burgas, Devnya and Varna) in some areas but a reduction followed by an increase in others (Sophia, Stara-Zagora, Dimitrograd and Plevan). Great similarity between changes in Varna and Devnya (2 regions near one another) was noted. The method is not recommended as a sole method of analyzing trends of atmospheric pollution but should be used with traditional hygienic and epidemiological and statistical methods. Figure 1; references 3 (Russian).
[604-2791]

USSR

UDC 616.155.194-G2:613.632 :313.13

INCIDENCE OF ANEMIA AMONG WORKERS IN CONTACT WITH LOW CONCENTRATIONS OF TOXIC SUBSTANCES

Moscow SOVETSKAYA MEDITSINA in Russian No 7, 1979 pp 73-78 manuscript received 19 Jun 78

SOKOLOV, V. V., professor, GRIBOVA, I. A., candidate of medical sciences, ZORINA, L. A., professor and SORKINA, N. S., candidate of medical sciences, Scientific Research Institute of Labor Hygiene and Occupational Diseases, USSR Academy of Medical Sciences, Moscow

[Abstract] In order to evaluate the effects of exposure to low concentrations of various toxic substances on the hematopoietic system, hemoglobin levels were determined in 2527 female and 1695 male workers in research laboratories and production facilities exposed to low levels of benzene, toluene, acetone, and chlorinated hydrocarbons. The control values for 1692 unexposed women and 1375 men were, respectively, 12.7 g% and 14.8 g%. For men and women in research laboratories the respective values were 13.8 and 11.8 g%, while the corresponding values for production line workers were 14.1 and 12.2 g%, respectively. The present observations indicate that exposure to low concentrations of the toxic substances in question depressed hemoglobin production; this amounted to less than 1 g% during the first year of exposure and showed no further depression with time. Figure 1; references 20: 1 Roumanian, 3 Western, 16 Russian.
[606-12171]

USSR

UDC 616.66:620.197.30

MORPHOLOGIC AND CYTOCHEMICAL STUDIES ON THE EFFECTS OF LONG-TERM EXPOSURE TO ORGANOCHLORINE PESTICIDES ON BLOOD CELLS AND THE HEMATOPOIETIC ORGANS

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 272-275 manuscript received 14 Feb 78

KOMAROVA, L. I. and GORBACHEVSKAYA, YE. F., All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticide, Polymer, and Plastics, Kiev

[Abstract] Morphologic and cytochemical studies on rabbits exposed for 3 months to DDT (10 mg/kg; 1/50 LD₅₀) or the gamma isomer of hexachlorocyclohexane (4 mg/kg; 1/50 LD₅₀) with feed showed that exposure to such agents resulted in marked morphologic changes in the hematopoietic tissues (reticular cell hyperplasia, increases in lymphocyte and plasmacyte counts). These changes were accompanied by cytochemical changes which most markedly affected cells involved in immunity. Peripheral blood lymphocytes showed activation of nonspecific esterases, acid phosphatase, and variable changes in glycogen levels depending on the agent of exposure. References 5 (Russian).
[608-12172]

ROLE OF NATURAL FACTORS IN FORMATION OF BODILY RESISTANCE

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 79-81 manuscript received 13 Jul 78

PROKOPENKO, YU. I., candidate of medical sciences, Institute of General and Communal Hygiene imeni A. N. Sysin of the USSR Academy of Medical Sciences, Moscow

[Abstract] Tests to determine the general principles of the combined effect on the body of natural and anthropogenic factors of the environment were made under experimental conditions in respect to ultraviolet radiation and level of chemical substances. Tests reported include: one and same level a 0.5% solution of 3,4-benzpyrene in benzene on Bal'b line mice with 18 weeks of different levels of ultraviolet radiation revealed a difference of degree of tumor formation; inducement of tumors by dimethylnitrosamine under optimum ultraviolet radiation showed tumor formation in 35% of the animals; the mean latent period of formation of tumors after sub-erythema doses of ultraviolet radiation was 1.3 times greater than that in non-irradiated animals. Different doses of aniline and chlorophos given orally, 5-250 mg/kg, to different groups of animals kept under different levels of ultraviolet radiation revealed the highest cholinesterase level after 1/2 erythema dose and lowest after an excess of radiation. Subacute experiments subjecting animals to aniline, nitrates and chlorophos for 3 hours in doses corresponding to 1/10 LD₅₀ with ultraviolet radiation showed that, for the same dosage level of a chemical but different ultraviolet levels, the time of entry of an unfavorable effect may change 2-5 fold. A study of the allergenic effect of dinitrochlorobenzene under different ultraviolet radiation levels showed positive skin reactions under optimum ultraviolet radiation was 1.9-fold less than under ultraviolet deficit while an excess of ultraviolet radiation increased the number of animals with positive reactions 3.5-fold. References 2 (Russian).

[604-2791]

USSR

UDC 614.771

HYGIENIC APPROACHES TO STANDARDIZATION IN SOIL OF EXOGENIC SUBSTANCES OF ONE CHEMICAL GROUP

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 81-83 manuscript received 19 Jun 78

NAYSHT'EYN, S. YA., Kiev Scientific Research Institute of General and Communal Hygiene imeni A. N. Marzeyev

[Abstract] Assuming that the development of norms of the level of chemical compounds in the environment suggests that hygienic standards of chemicals in reservoirs are applicable to orientational regulation of exogenic substances in the soil, a study of prometrin (as a representative of the symmetric triazines) revealed that norms of 0.5 mg/kg in the soil (within permissible residual levels in plants) may be maintained by expenditure of 3 kg of prometrin per hectare with the limiting factor found to be translocation of prometrin from the soil into the plant. Since the other symmetric triazines studied possess chemical properties very similar to prometrin, it was assumed the intensity of translocation from the soil into crops will be the same for them. Therefore the maximum permissible level in soil of herbicides of the symmetric triazine group was set at 0.5 mg/kg. References 5 (Russian). [604-2791]

USSR

UDC 613.632:547.233.3]-074.543.544

DETERMINATION OF TRIETHYLAMINE IN AIR BY THE METHOD OF THIN-LAYER CHROMATOGRAPHY

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 85-86 manuscript received 22 Apr 78

TSENDROVSKAYA, V. A., All-Union Scientific Research Institute of Hygiene of Toxicology of Pesticides, Polymers and Plastics, Kiev

[Abstract] Determination of triethylamine (TEA) by a thin layer chromatography method involved placement of 1, 5, 10, 15 and 20 mkg of sulfuric acid solutions of TEA in a porcelain dish, steam drying, dissolving residues by 1-2 drops of 0.01 N HCl and placing on chromatographic plates. The spots were eluted, dried and placed in a chamber with iodine vapors. TEA becomes visible as yellow spots within 10 minutes. Quantitative determination of TEA was performed by comparison of the area of these spots with a calibrated graph. Errors in the two values did not exceed $\pm 7\%$. Formation of non-volatile salts of TEA was confirmed by tracing the interaction of

TEA with bromethymol blue and colorimetry of the yellow chloroform extract. Evaluation of polymer materials and the release of TEA into the atmosphere was performed by the same method. Reference 1 (Russian).
[604-2791]

USSR

UDC 611.341-018.73-08:599.323.4

STRUCTURAL DISTINCTIONS OF THE SMALL INTESTINAL MUCOSA IN GNOTOBIOTICS RATS

Leningrad ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII in Russian No 5, 1979
pp 55-61 manuscript received 24 Jul 78

ZUFAROV, K. A., CHAKHAVA, O. V., GORSKAYA, YE. M. and YULDASHEV, A. YU.,
Laboratory of Biophysical Problems (headed by Prof K. A. Zufarov, academ-
ician of the Uzbek Academy of Sciences), Tashkent Medical Institute, and
Laboratory of Gnotobiology (headed by O. V. Chakhava, doctor of medical
sciences), Institute of Epidemiology and Microbiology imeni N. F. Gamaleya,
USSR Academy of Medical Sciences, Moscow

[Abstract] Morphological and electron microscopic studies were made of
pieces of small intestine from OFA rats. Fixing and staining techniques
are described. The crypts are shallower in gnotobiotic rats than ordinary
animals. Mucosal index [ratio of villus length to crypt depth] is 2-2.5
for jejunal mucosa and 1.4-1.7 for iliac mucosa in ordinary rats, versus
3-4 for germ-free ones. The latter present fewer mitotic figures, consider-
able differences in linear, proliferative, migratory and desquamation pa-
rameters, craniocaudal gradient of linear dimensions of villi and crypts,
number of goblet cells, etc. It is suggested that the structural differ-
ences constitute adaptation and that the microflora is involved here. There
is poorer development of mucosal connective tissue in gnotobiotics, and it
contains fewer immunocompetent cells. Figures 6; references 22: 9 Russian,
13 Western.
[653-10,657]

USSR

UDC 628.315:[616.9:362.11

STUDY OF REGIMES OF DECONTAMINATING WASTE WATERS OF INFECTIOUS HOSPITALS

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 73-74 manuscript
received 25 Oct 78

MEL'NIKOVA, M. YA., YAKIMOVA, V. G., LEVITSKIY, L. N., TAKHISTOV, V. A.,
SAFINA, L. S., BUTUSOVA, A. V., PAVLITSKAYA, V. V. and TROFIMOVA, N. I.,
Leningrad Municipal Disinfection Station

[Abstract] A comparison of methods of decontaminating waste waters (chlo-
rination in departments, chlorination in departments with subsequent chlorine
treatment in sedimentation tanks, processing only at purification installa-
tions) at 6 hospitals involved a study of the Coli-titer, presence of

pathogenic flora, total chlorine and residual chlorine levels. The study showed double decontamination to be the most effective while decontamination only in the simplest sedimentation tanks was least effective. The study indicated that decontamination of waste waters in infectious hospitals requires high quality chlorination even in those hospitals with the simplest purification installations.

[604-2791]

USSR

UDC 616.155.3-008.1-057:359.11

LEUKOCYTE FUNCTION AND PERIPHERAL BLOOD COMPOSITION IN SAILORS DURING LONG-TERM EXCURSIONS

Moscow VOYENNO-MEDITSINSKIY ZHURNAL in Russian No 8, 1979 pp 52-54

LOMOV, O. P., candidate of medical sciences, major, Medical Service,
MUKHAMEDZHANOV, V. A., major, Medical Service and MAKAROVA, T. P.

[Abstract] Cytochemical studies were undertaken on the leukocytes of sailors engaged in long-term excursions aboard ships, as well as evaluation of peripheral blood differential counts. The results demonstrated that during the first few months leukocyte alkaline phosphatase underwent a statistically significant elevation, followed by a significant depression of activity, and moderate elevation during a subsequent 30 day shore rest, in comparison with control findings. During the equivalent periods of time, leukocyte glycogen showed initial depression which was replaced by elevation, while peroxidase activity showed significant elevation during the second half of the trip. During the 30 day rest period glycogen levels decreased but remained above control concentrations, and peroxidase returned to normal values. During the entire cruise monocyte counts sustained a progressive decrease, while segmented neutrophils presented with an initial elevation followed by depression. Hemoglobin values increased initially (from 156 g/liter control value to 163 g/liter), and subsequently decreased toward the end of the cruise (to 143 g/liter). The findings were interpreted as reflecting physiologic adaptation to new environmental conditions.

[607-12172]

USSR

UDC 612.766.1-057:623.611.696.7.007

IMPROVING WORK EFFICIENCY OF RADAR STATION OPERATORS

Moscow VOYENNO-MEDITSINSKIY ZHURNAL in Russian No 8, 1979 pp 45-47

ATROSHKIN, N. T., colonel, Medical Service

[Abstract] Medical examinations of radar operators and evaluation of their performance on tests designed to evaluate mental alertness and physical coordination led to the conclusion that participation in light sports activity and athletics promotes greater work efficiency. In addition, the recommendations also included the incorporation of 7-10 min rest periods between 2 h work shifts, that should include physical exercise in accordance with official regulations. Furthermore, special eye exercise should be implemented to increase the powers of accommodation.

[607-12172]

NATURAL FOCI OF INFECTION IN THE URALS

Moscow VOYENNO-MEDITSINSKIY ZHURNAL in Russian No 8, 1979 pp 42-44

RZHEVSKIY, YE. R., colonel, Medical Service, KAPLINSKIY, M. B., candidate of medical sciences, colonel (Ret.), Medical Service, SVERDLOV, A. K., colonel, Reserve Medical Service, DVORNIK, V. F., Lt. Col., Medical Service and FILIMONOV, V. B., Captain, Medical Service

[Abstract] A brief survey is presented of the role of military physicians in uncovering of natural foci of infectious diseases in the Urals. The conclusions reached is that military medical personnel, particularly physicians, should be attentive to this problem when stationed in the Urals since this often involves new and unexpected infections that may seriously affect combat readiness of the troops. References 12 (Russian).

[607-12172]

USSR

UDC 612.67.014.5:576.312.332.2:575.19

CYTOGENETIC ASPECTS OF LONGEVITY

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 305-308 manuscript received 24 Apr 78

MAN'KOVSKIY, N. B., KUZNETSOVA, S. M. and CHERKASSKAYA, YE. A., Institute of Gerontology, USSR Academy of Medical Sciences, Kiev

[Abstract] Cytogenetic investigations on aged subjects (older than 90 years) and their relatives (20-89 years), as well as on 20-89 years old relatives of patients with cerebrovascular disease without long-lived (90 years or more) ancestors revealed definite differences in terms of the genetic apparatus between the two groups. Included was the observation that the Y/F index was 1.001 ± 0.019 in the former group, and 0.892 ± 0.015 ($p < 0.001$) in the latter. The differences were interpreted to represent differences in the chromosomal repair and adaptive mechanisms and may serve predictive purposes. References 18: 1 Ukrainian, 8 Western, 9 Russian. [608-12172]

USSR

UDC 575.591

PERICENTRIC INVERSION OF CHROMOSOME 9 IN TWO WOMEN WITH CONGENITAL MALFORMATIONS OF THE INTERNAL GENERATIVE ORGANS

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 300-304 manuscript received 3 Apr 78

KIRILLOVA, YE. A., ROZOVSKIY, I. S., KURBANOVA, A. G. and KARETNIKOVA, N.A., All-Union Scientific Research Institute of Obstetrics and Gynecology, USSR Ministry of Health, Moscow

[Abstract] Description is provided of studies carried out on two women, 23 and 38 years old, with developmental abnormalities of the generative organs. Cytogenetic investigations revealed a 46, XX, inv9 karyotype (p13; q13) for both. Considerations of the malformations and the identical pericentric inversions suggests that chromosome 9 contains genes responsible for the development of the genitourinary system. Figures 3; references 18: 1 Russian, 17 Western. [608-12172]

MAPPING LOCUS Gld1B WHICH CONTROLS THE BIOSYNTHESIS OF RESERVE PROTEINS
IN SOFT WHEAT

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 276-282 manuscript
received 28 Mar 78

RYBALKO, A. I. and SOZINOV, A. A., All-Union Breeding and Genetics Institute,
Odessa

[Abstract] Genetic studies and gliadin electrophoresis were combined to map the locus Gld1B (Gld = gliadins) responsible for the control of these reserve proteins in the endosperm of Chinese Spring and Reliance wheats. The resultant data demonstrated that gliadins are determined by four independently inherited loci on chromosomes 1B, 1D, 6A and possibly 1A. Locus Gld1B is on the short arm of chromosome 1B at a $41.6 \pm 2.47\%$ crossover distance from the centromere. The crossover values between Gld1B and the centromere do not vary significantly under different growth conditions. Tables 3; references 12: 3 Western, 9 Russian.
[608-12172]

USSR

UDC 615.917:547.532].015.4

USE OF CHEMICAL STRUCTURE--BIOLOGICAL ACTIVITY PATTERNS FOR PREDICTING
PARAMETERS OF TOXICITY OF BENZENE DERIVATIVES

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 7-10 manuscript
received 13 Jul 78

KRASOVSKIY, G. N., doctor of medical sciences, YEGOROVA, N. A. and ZHOLDA-
KOVA, Z. I., candidate of medical sciences, Institute of General and Commu-
nal Hygiene imeni A. N. Sysin, USSR Academy of Medical Sciences, Moscow

[Abstract] A study of correlation dependencies between indicators of chronic
and acute toxicity of benzene derivatives, coefficients of distribution of
octanol/water and Hammett electron constants showed a close correlation be-
tween the threshold dose and the maximal ineffective dose of the benzene
derivatives and the coefficients of distribution of these substances in the
octanol/water system. The dependence between maximal ineffective dose and
coefficients of distribution is best described by non-linear equations.
These equations can be used for accurate calculation of parameters of chronic
toxicity of benzene derivatives. References 10: 5 Russian, 5 Western.
[604-2791]

USSR

UDC 613.31+628.1.03]:546.42

BIOLOGICAL EFFECT OF HIGH CONCENTRATIONS OF STABLE STRONTIUM IN DRINKING
WATER

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 11-13 manuscript
received 28 Aug 78

SERGEYEV, YE. P. and KUCHMA, N. YU., Institute of General and Communal Hy-
giene imeni A. N. Sysin of the USSR Academy of Medical Sciences, Moscow

[Abstracts] A study of embryotoxic effect (on rats) of strontium in drink-
ing water and materials on the physical development of children involved
inclusion of 80, 20, 10, 5 and 2 mg/l of strontium chloride in the drinking
water of white rats, examination of 70 female rats (sacrificed on the 21st
day of pregnancy after receiving the strontium chloride) and a survey of 3
regions with different strontium levels (group 1 - 2 mg/l, group 2 - 7 mg/l,
group 3 - 13 mg/l and 0.5 mg/l (control group) in the drinking water. Stron-
tium levels from 2 to 8 mg/l in drinking water did not affect rat embryonal
development. Levels of strontium in drinking water up to 13 mg/l delayed
development of the large fontanelle in children of 1-3 years of age. There

was a direct dependence between dentition in 1-year old children and strontium level in the drinking water. According to the physical development of children up to an age of 3 years, the inactive concentration of strontium in drinking water was assumed to be 7 mg/l. References 5.

[604-2791]

USSR

UDC 612.53/59+612.273.1

ADRENERGIC CONTROL OF THERMOGENESIS DURING ADAPTATION TO HYPOXIA

Frunze IZVESTIYA AKADEMII NAUK KIRGIZSKOY SSSR in Russian No 2, 1979 pp 57-61 manuscript received 28 Nov 78

SOODANBEKOVA, A. S., Institute of Physiology and Experimental Pathology of High-Altitude Regions, Kirgiz SSR Academy of Sciences

[Abstract] Studies were conducted on male albino rats subjected to hypoxia and then exposed to ambient temperatures of 20-22° and 2-4°C. Thermal effectiveness of muscle contractions was low after adaptation to hypoxia. It was demonstrated that cold thermogenesis is determined by red muscle fibers primarily in control animals, and by activity of white fibers in hypoxia-adapted ones. There is dissimilar involvement of tonic and locomotor components of muscles in thermogenesis in the control and hypoxia-adapted animals. It is assumed that interaction of epinephrine and beta-adrenoreactive structures is more important to thermogenesis in the presence of hypoxia, and there is appreciable attenuation of effect of norepinephrine. It is also assumed that there is a different mechanism of interaction between adrenergic effects of the sympathetic nervous system and beta receptors in adaptation to hypoxia than adaptation to cold. Figures 3; references 24: 18 Russian, 6 Western.
[541-10,657]

MICROCIRCULATORY SYSTEM AND STRUCTURE OF COMPACT SUBSTANCE OF THE CAT'S
TIBIAL DIAPHYSIS UNDER NORMAL CONDITIONS AND AFTER MULTIPLE EXPOSURE TO
GRAVITATIONAL ACCELERATIONS

Leningrad ARKHIV ANATOMII, GISTOLOGII I EMBRIOLOGII in Russian No 5, 1979
pp 36-45 manuscript received 21 Mar 78

PATLAS, N. M., Chair of Biomedical Disciplines (headed by Docent Yu. N. Trifonov), Military Institute of Physical Culture; Chair of Normal Anatomy (headed by Prof Ye. A. Dyskin), Military Medical Academy imeni S. M. Kirov, and Laboratory of Experimental Bone and Joint Pathology and Surgery (headed by Prof E. N. Bellendir), Leningrad Scientific Research Institute of Surgical Tuberculosis

[Abstract] Studies were conducted on 104 mongrel cats of both sexes using an electric centrifuge to simulate accelerations (head--pelvis, +Gz). Roentgenological, in vivo injection of India ink in gelation and histological methods were used to examine the tibia, and details thereof are given. New data were obtained on structure of compact substance of cat diaphysis and intraosseal microcirculatory structural distinctions, both qualitative and quantitative, allowing differentiation between normally occurring changes and those induced by accelerations; under the influence of the latter the typical changes were: dilatation of blood vessels in both the perforating and osteon canals, with enlargement of vessel-containing osseous channels; osteogenesis, resulting in larger transverse size of diaphysis and thickening of compact bone in the periosteal and endosteal regions; "decompartmentization" of compact bone; increase in number of blood vessels; formation of vascular plexi and nets, change in direction of vessels, shape and size of vascular loops. Compensatory reduction of bone and development of an osteogenic process in the periosteal and endosteal regions prevent pathological consequences and other complications. Figures 6; references 28: 17 Russian, 11 Western.

[63-10,657]

USSR

UDC 611.1:539.4

ANALYSIS OF ARTIFICIAL HEART VALVE DYNAMICS

Riga MEKHANIKA KOMPOZITNYKH MATERIALOV in Russian No 3, 1979 pp 537-539 manuscript received 28 Dec 78

AGAFONOV, A. V. and KISELEV, S. N., Institute of Cardiovascular Surgery imeni A. N. Bakulev, USSR Academy of Medical Sciences, Moscow, and the Moscow Institute of Railroad Transport Engineers

[Abstract] Experimental and echocardiographic data obtained on patients were used to evaluate the dynamics of artificial heart valves as they affect the supporting holding frame. Resultant numerical data are presented for the mitral ball-type valve MKCh-25, including the fact that the ball strikes the frame with a velocity of 0.1-0.3 m/sec.

[551-12172]

USSR

UDC 633.522-631.52/53

EFFECTS OF GAMMA RAYS AND CHEMICAL MUTAGENS ON QUANTITATIVE CHARACTERISTICS OF HEMP

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 283-287 manuscript received 3 Mar 78

ZHATOV, A. I., All-Union Scientific Research Institute of Bast Fiber Crops, Glukhov, Sumy Oblast

[Abstract] Observations of hemp plants produced by seeds irradiated with gamma rays (1 or 15 kR) or treated with chemical mutagens (soaking in 0.01% ethylenimine for 18 h or in 0.05% ethylmethanesulfonate for 12 h) showed the appearance of both positive and negative hereditary characteristics. Combination of the wider spectrum of mutant plants with those from appropriate breeding practices could lead to the development of new varieties of hemp with superior commercial characteristics. Tables 5; references 6 (Russian).

[608-12172]

USSR

UDC 575.113.632.26

LETHAL GENES OF THE TRITICUM MACHA SPECIES

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian Vol 32 No 6, Jun 79 pp 489-495 manuscript received 14 Dec 78

BABADZHANYAN, G. A. and BEKNAZARYAN, L. G., Institute of Soil Science, ArmSSR Ministry of Agriculture

[Abstract] *Triticum macha* is described (Dekaprelevich 1962, 1974) as a primitive, relict population, preserved in an isolated refuge in Western Gruzinia, in a relatively unchanged and undifferentiated form; it possesses considerable capacity for hereditary change. This article cites literature sources and original work on red chlorosis, white mottled chlorosis, hybrid necrosis and hybrid dwarfness to show their potential induction due to the presence in the *T. macha* genotype of all members of the pertinent complementary gene pairs. Variants and forms of *T. macha* studied are listed. Seeds were obtained from Prof. P. P. Naskidashvili of the Department of Genetics, Selection and Seed Husbandry of the Georgian Agriculture Institute. References 31: 12 Russian, 19 Western.
[636-8586]

USSR

UDC 616.895.8:616-018.7:576.312.332-777.3

CIRCADIAN RHYTHMS IN THE X-CHROMATIN OF BUCCAL EPITHELIUM IN SCHIZOPHRENIC WOMEN

Kiev TSITOLOGIYA I GENETIKA in Russian No 4, 1979 pp 296-299 manuscript received 27 Mar 78

BROVINA, N. N. and SITENKO, L. N., Scientific Research Institute of Neurology and Psychiatry, Kharkov

[Abstract] Comparisons were made of circadian variability in the number of nuclei with the x-chromatin in the buccal epithelium of 15 normal women and 20 female schizophrenics in the 20-36 year age bracket. Studies on control subjects demonstrated that the number of nuclei with the x-chromatin varied from 19% to 52% during a 24 h period, with an insignificant variability for any one individual of 2-8%. The mean figures for the control group at 0800, 1600, and 2000 h were 31.1, 28.3, and 29.2%, respectively. In the case of the patients group variability ranged from 15% to 38% before therapy, and from 16% to 40% after therapy. The corresponding values for the patient group as a whole at 0800, 1600, and 2000 h were, respectively, 22.7, 23.1, and 22.0%. These findings confirm the contention that schizophrenia involves changes at the cellular level and the circadian features of the x-chromatin provide an additional parameter that may be used for diagnostic purposes and for following therapeutic results. Tables 2; references 12: 2 Western, 10 Russian.

[608-12172]

USSR

UDC 616.895.4-036.15

DIAGNOSIS AND TREATMENT OF MASKED DEPRESSION

Moscow SOVETSKAYA MEDITSINA in Russian No 7, 1979 pp 19-24 manuscript received 17 Jul 78

VINOGRADOV, M. V., Moscow

[Abstract] An approach is described for the diagnosis of masked depression which was found effective with a group of 68 patients (45 females; 23 males; 20-47 years of age) in a psychoneurologic hospital; 29 relatives of these patients presented with manic-depressive syndromes and 17 with cyclothymia. The diagnostic features of these patients included the observations that their somatoneurologic disorders and depressive states were accentuated in

the morning hours and abated, or completely disappeared, in the evening. Tricyclic antidepressants were highly effective in doses of 250-300 mg/day. During the initial 20-25 days the patients were maintained exclusively on chemotherapy: half of the daily dose (100-150 mg) was given at night, and the remainder equally fractionated over the day (in 50 mg fractions). Therapeutic effectiveness was evident within 4-5 days, which consisted of alleviation of somatic complaints followed by abatement of depression. This manner of unmasking depression renders it susceptible to psychiatric treatment. References 22: 10 Russian, 12 Western.
[606-12172]

USSR

UDC 616.891-085.214.22

FENAZEPAM IN THE TREATMENT OF PATIENTS WITH PROGRESSIVE NEUROPSYCHIC DISORDERS

Moscow SOVETSKAYA MEDITSINA in Russian No 7, 1979 pp 8-14 manuscript received 23 Jan 79

KALANDARISHVILI, A. S., BORTNIK, T. L., BERDINA, YE. S., LESOVSKAYA, T. V. and ALEKSANDROVSKIY, YU. A., Laboratory of Clinical Neuropsychopharmacology, Institute of Pharmacology, USSR Academy of Medical Sciences, Moscow, and the Moscow City Psychiatric Hospital No 12

[Abstract] Clinicopharmacologic evaluation of Fenazepam, a new Soviet tranquilizer derived from 1,4-benzodiazepine, was conducted on 200 patients 20-65 years of age (105 males, 95 females) with borderline neuropsychiatric disorders. Initially, chemotherapy was commenced in the absence of psychotherapy starting with 0.5-5 mg of Fenazepam per day, with introduction of psychotherapy (autogenic exercises, hypnosis, functional training, and narco-psychotherapy involving nitrous oxide and oxygen mixtures) by the 3rd to the 10th day. An adequate effect with chemotherapy was generally obtained in 2-5 days, obviating the need for any further increases in the dosage. References 5 (Russian).
[606-12172]

USSR

UDC 614.31:613.2

STATE OF THE ART OF SANITARY SUPERVISION IN THE AREA OF NUTRITIONAL HYGIENE

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 30-34 manuscript
received 11 Apr 78

PETROVSKIY, K. S. and VANKHANEN, V. D., professors, NERUSH, A. A. and POPOVA, ZH. S., First Moscow Medical Institute imeni N. M. Sechenov, Donetsk Medical Institute imeni A. M. Gorkiy

[Abstract] Present-day sanitary supervision in the area of nutritional hygiene, which places emphasis on prevention and control of food poisonings and diseases of alimentary origin, was discussed. The work of nutritional hygienists in preventive sanitary supervision, sanitary supervision during introduction into operation of new assembly lines and other operations and during operation of food industry enterprises were described. The on-going sanitary supervision program involves control of use of pesticides in agriculture and residues of them in food and improvement of organizational forms and methods of operation at sanitation-epidemiological stations.
[604-2791]

USSR

UDC 614.71/.73-07:616-07(048.8)

SOME DATA ON THE EFFECT OF AIR POLLUTION ON PUBLIC HEALTH

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 51-55 manuscript
received 21 Apr 78

BYKHOVSKIY, A. V., professor, and DYUBANKOVA, E. N., candidate of chemical sciences, Moscow Scientific Research Institute of Hygiene imeni F. F. Erisman

[Abstract] A review of studies of the effect of air pollution on public health described a study of homozygotes with different rates of illness due to air pollution: a Chicago study of high-risk patients; studies of children which revealed that the effects of early pollution may last a lifetime and a study of 43 USA cities showing the connection between degree of air pollution and morbidity. Problems of remote after-effects of air pollution were discussed. References 15: 5 Russian, 10 Western.
[604-2791]

USSR

UDC 636.085

HYGIENIC PROBLEMS ASSOCIATED WITH PRODUCTION OF FODDERS USED IN INDUSTRIAL ANIMAL HUSBANDRY

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 55-60 manuscript received 23 Aug 77

NIKOLOV, D. KH., professor and KOLYCHEVA, S. S., Kuban' Medical Institute imeni Krasnaya Armiya, Krasnodar

[Abstract] Factors affecting the hygienic conditions of labor and the health of animal husbandry and fodder production workers were discussed with emphasis on problems associated with the presence of eumycetes and alphotoxins, the use of antibiotics and chemotherapeutic preparations, high-risk of workers in combination fodder plants, fodder shops and animal husbandry workers, careful use of pesticides, the hazards of dust pollution in animal husbandry and its relation to disease of the eyes, ears, nose, throat and skin and work with caustic lye, ammonia, strong acids and formaldehyde. References 44: 39 Russian, 5 Western.
[604-2791]

USSR

UDC 613.31-078

SANITARY-BACTERIOLOGICAL EVALUATION OF DRINKING WATER QUALITY

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 71-73 manuscript received 31 Oct 78

PANTYUKOVA, Z. I., Municipal Sanitation-Epidemiological Station, Mezhdurechensk

[Abstract] Aspects of GOST-2843 "Drinking Water" were discussed against the background of 3 years of practical use of this standard with results of 2250 tap water samples described after use of the fermentation method to measure proteolytic activity of isolated bacteria. References 5 (Russian).
[604-2791]

USSR

UDC 614.37:576.851.48]-078

HIGH-SPEED BACTERIOLOGICAL STUDY OF SMEARS FROM OBJECTS OF THE EXTERNAL ENVIRONMENT

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 74-75 manuscript received 30 Jun 78

KARTSEV, V. V., KARASEVA, L. I., OZERETS, A. V., MAKAROVA, G. V. TSIKARISH-VILI, T. A., and MEDVEDEVA, I. N. (Leningrad)

[Abstract] A newly developed medium (Koda) was compared with Kessler medium for effectiveness of revealing coli bacteria from washings taken at public catering and food industry enterprises and hospital and communal institutions. A study of 908 washings revealed coli bacteria in 118 cases; with both media in 91 cases, with only Koda medium in 12 cases and with Kessler medium in 15 cases. Daily cultures of *E. coli*, *B. proteus mirabilis*, *B. proteus vulgaris*, *Ps. aeruginosa*, *St. aureus*, *St. epidermidis* were sown on Koda medium to check its inhibiting properties. The study showed the uniformity of inoculability of coli bacteria on both media. Results could be evaluated within 16-18 hours with the use of Koda medium rather than the 72 hours required by classical method, the medium is economical and is recommended for everyday use in bacteriological laboratories. Reference 1.
[604-2791]

USSR

UDC 614.7:662.919]-074

HYGIENIC EVALUATION OF DEGREE OF POLLUTION OF ENVIRONMENT DURING USE OF LIQUID FURNACE FUEL

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 88-89 manuscript received 30 Jun 78

CHIKOVA, O. N. and YEROFYEVA, V. I., candidates of chemical sciences, Scientific Research and Design Institute "Gipronigaz" Saratov

[Abstract] The degree of pollution of air of domestic and industrial premises and of atmospheric air during use of liquid fuel (corresponding to TU 380015-71) in housing units and boiler rooms of a sovkhos in suburban Saratov Oblast in the 1975-76 heating season was evaluated. Carbon monoxide made up the basic part of the living premises pollutants with the level decreasing in proportion to the distance from the heat source and exceeding the maximum permissible dose 2-fold at 1 m from the burner. Unacceptable

levels of SO_2 were found in kitchens, while nitrogen oxides were found only in isolated instances. Phenol, benzene, acetone, methanol, formaldehyde, acetylene and hydrogen sulfide were not found in a single sample. Pollutant levels at industrial enterprises did not exceed permissible levels except in boiler rooms operating around the clock. Atmospheric air did not reveal any excess of permissible level of the pollutants studied. References 2 (Russian).
[604-2791]

USSR

UDC 581-162

PROCESS OF FORMATION OF MICROSPORES UNDER X-RADIATION IN MUTANTS OF SOFT WINTER WHEAT

Yerevan BIOLOGICHESKIY ZHURNAL ARMENII in Russian Vol 32 No 6, Jun 79 pp 513-519 manuscript received 18 Jul 78

SHAKARYAN, ZH. O., Institute of Experimental Biology, ArmSSR Academy of Sciences

[Abstract] This is a report of the cytogenetic nature of induced mutants of softw winter wheat, as compared with the initial sorts, when it is subjected to 10 kr x-radiation. Microsporogenesis and pollen fertility were examined. Procedures used have been described earlier (Brock, 1955). Wheat variants used here were Alty-Agach, Besostaya 1, Squarehead kk [kk = red spike] and Erectoid 37/1. No essential differences were seen between the mutants and initial sorts, with respect to frequency of disruption of microsporogenesis or pollen fertility following the x-radiation. The mutants displayed higher sensitivity to the radiation than did the initial sorts. It is noted that radiation mutagenesis can produce morphological mutants with increased pollen fertility. References 28: 16 Russian, 12 Western. [636-8586]

USSR

UDC 577.391

BIOLOGICAL ACTION OF RADIONUCLIDES ON PLANTS

Moscow ISVESTIYA AKADEMII NAUK SSSR, Seriya Biologicheskaya in Russian No 4, Jul/Aug 79 pp 498-504 manuscript received 19 Dec 77 pp 576-584

PRISTER, B. S., KAL'CHENKO, V. A., POLYAKOVA, V. I., SHEVCHENKO, V. A., SHEYN, G. P. and ALEKSAKHIN, R. M., Institute of General Genetics, USSR Academy of Sciences, Moscow

[Abstract] Noting an insufficiency of research on the effect of beta radiation of plants, on radiosensitivity of agricultural plants, the effect of radiation on harvest fields, specific features of chronic irradiation under natural conditions and dosimetry of young crops of agricultural plants, the authors undertook the present work. Spring wheat (Skala), potatoes (Berlikhingen) and spring barley (Maya) were exposed to solutions of nuclear fission radionuclides U238 and Y90 at stages of growing. Dose absorbed from application of the solutions was 10 to 80 times higher than that from external gamma radiation. Developmental stages, stem length, survival, grain

yield, chromosome aberrations in miosis, mutations in M_2 were mathematically shown to be proportional to dose. The most radio-susceptible phases of the barley development was the shooting stage (with respect to LD_{50}) and the ear formation (with respect to YD_{50}). Three traits of the mutagenesis are noted. The first is that mutations are proportional to the power of the chronically irradiated dose. The second trait of mutagenesis in chronically irradiated populations is cyclicity in intensity of the mutation process, related to seasonal changes in tempo of division of cells in the plants and--correspondingly--to changes in dosages at the mitotic and meiotic cycles. A third essential trait of mutagenesis in chronically irradiated populations is the increase in radioresistance of the populations. In 15 species of plants, in the course of several years of growing under conditions of chronic beta irradiation, high resistance was manifested to supplementary gamma irradiation of seeds in doses of 3.5 and 7 krad. Plants of irradiated populations are distinguished also by a mitotic index higher than the control (Cherzhantseva et al, 1971). In studies of the biological action of radionuclides on higher organisms a practical task at the present time is a search for criteria which define the degree of damage to the ecosystem, and devising quantitative means to evaluate ecological sensitivity and reparative potential of biogeocenoses (Aleksakhin, 1907). To establish safe concentrations of radio-nuclides in the environment it is necessary to devise methods to measure the integral biological effect during irradiation of cenoses and to mathematically describe the dose-effect dependence at the cenotic and ecological levels. Figures 3; references 15: 11 Russian, 4 Western. [552-8586]

USSR

UDC 616-073.75:537.531.08

MODELING AND EVALUATION OF THE DEGREE OF RADIATION EFFECT ON THE MEDICAL ROENTGENOLOGICAL PATIENT

Moscow GIGIYENA I SANITARIYA in Russian No 6, 1979 pp 26-30 manuscript received 18 Apr 78

FROLOV, N. F., STAVITSKIY, R. V. and PROSTYAKOVA, M. A.

[Abstract] Experimental dosimetric studies were used to construct histograms of distribution of power of doses during X-ray study involving whole body scans or X-ray study of individual organs (lungs, liver, bone marrow, mammary glands, stomach, kidneys, spleen, pancreas and thyroid glands). Data for mean and modal doses of radiation were extrapolated from study of the lungs. These findings, reflecting such variables as the kind and time of study, the dimensions of the field of radiation and the power of emission, may serve as models of the degree of radiation effect on a patient during X-ray study. They may be used in studies of any organ. Figures 2; references 4 (Russian). [604-2791]

USSR

SCIENTISTS AND SCIENTIFIC ORGANIZATIONS

OBITUARY OF ALEKSANDR IVANOVICH YANUSHEVICH

From IZVESTIYA AKADEMII NAUK KIRGIZSKOY SSR in Russian No 2, 1979 p 89

USUBALIYEV, T. U., DUYSHYEV, A. D., IBRAIMOV, S. I., FOMICHIENKO, K. YE., KULMATOV, K. N., NAUMOV, P. I., DZHUMAGULOV, A., KHODOS, P. M., MINICH, N. G., MOLDOVAYEV, K. M., MASALIYEV, A. M., KOSHUYEV, T. KH., ABAKIROV, E. A., BEGMATOVA, S. B., KABANOV, M. F., KARYPKULOV, A. K., ALIMOV, O. D., MAMYTOV, A. M., TABYSHALIYEV, S. T., BLOKHIN, G. P., SADYKOV, R. E., KARAKYEV, K. K., YAKOVLEV, V. G., IMANALIYEV, M. I., CHALOV, P. I., SHAYMERGENOV, A. A., ZAKHAR'YEV, N. I., BALBAKOV, M. B. and TOKOBAYEV, M. M.

[Abstract] A. I. Yanushevich (1903-1979) began to work in 1930, after graduating from Tomsk State University, as assistant and then director of the Biological Institute of this university; he has been a member of the CPSU since 1930. His positions and affiliations included the following: scientific secretary of the Biomedical Institute at the West Siberian Branch of the USSR Academy of Sciences [AS], laboratory head at the same institute, laboratory head at the Institute of Biology, Kirgiz AS, vice president of the Kirgiz AS, director of the Institute of Biology of the Kirgiz Academy, and from 1974 to his death, laboratory head at the Institute of Biology, Kirgiz AS. His special field was vertebrate fauna, and conservation thereof. He published over 100 works on this topic and was involved in publication of some major monographs, such as "Birds of Kirgizia," "Mammals of Kirgizia," "Biological Bases for the Control of Harmful Rodents," and others. He also participated in the education of scientists. Several honorary titles and awards were bestowed upon him for his achievements in these fields.

[541-10,657]

USSR

UDC 615.9:632.95:547.241(048.32)

TOXICOLOGY OF ORGANOPHOSPHORUS PESTICIDES. REVIEW OF MONOGRAPH OF YU. S. KAGAN "TOKSIKOLOGIYA FOSFORORGANICHESKIKH PESTITSIDOV," Moscow, 1977, 296 pp.

Moscow GIGIYENA TRUDA I PROFESSIONAL'NYE ZABOLEVANIYA in Russian No 7, Jul 79 p 61

DATSENKO, I. I., MARTYNYUK, V. Z. and SHTABSKIY, B. M., Lvov (Reviewers)

[Abstract] The book is described as small in volume but filled with substantive material, clearly presented, on the current status of organophosphorus pesticide (OPP) toxicology. Of relatively more importance are chapters on molecular mechanisms of action and metabolism of OPP, delayed sequelae, oncological implications and application as affected by climate. Shortcomings, but not such as to downgrade the text, involve insufficiency of information on assessment of accumulation, and application as a function of microclimate. The book is felt to be a creative task, warranting reprint. No references.
[635-8586]

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